

ABSTRACT OF THE DISCLOSURE

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A method of and apparatus for analyzing a substance takes a stream of ions in said substance and supplies the ions to a collision cell including a quadrupole rod set for guiding the ions and a buffer gas. An RF voltage is applied to the quadrupole rod set to guide ions. An additional alternating current signal is applied to the quadrupole rod set at a frequency selected to cause resonance excitation of the secular frequency of a desired ion, whereby said desired ions are excited and undergo collision with the buffer gas causing fragmentation. The invention then provides modulation of the alternating current signal applied whereby periods in which said alternating current signal is applied alternate with periods in which said alternating signal is not applied. The ion spectrum after fragmentation is collected to generate one set of data for one spectrum, representative of the ion spectrum when the alternating current signal is applied, and a another set of data for another spectrum, representative of the ion spectrum when the alternating current signal is not applied. These two spectra can be subtracted to give a spectrum indicative of the effect of fragmentation.

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